CITY OF CLEVELAND
Mayor Frank G. Jackson

Complete & Green Streets Progress Report 2016

Prepared by the Mayor's Office of Sustainability, Mayor's Office of Capital Projects, City Planning, and Department of Public Works

Introduction

The purpose of this Complete and Green Streets Progress Report is to track the impact of implementing the City of Cleveland's Complete and Green Streets Ordinance (No. 798-11). City departments and community stakeholders use these performance metrics to provide accurate information to the public about the City's progress implementing a network of Complete and Green Streets.

Each indicator in this report measures some aspect of complete or green streets that is related to the goals and objectives of the Complete and Green Streets initiative. This Progress Report includes outputs (infrastructure in the right-of-way), outcomes (the results of the outputs), and key initiatives either complete or in process.

This report includes no exceptions to the Complete and Green Streets Ordinance.

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1. Vision

The City of Cleveland is committed to the creation of a network of Complete and Green Streets that will improve the economic, environmental and social well-being of its citizens. Cleveland's network of Complete and Green Streets will provide safe and desirable travel for users of all ages and abilities and accommodate pedestrians, cyclists, motorists and transit while also incorporating best management practices in green infrastructure.

2. Goals and Objectives

Goal #1: Provide transportation system with maximum safety

Reduce the number of pedestrian and bicycle injuries and fatalities with the goal of having the lowest rates per capita in the state.

Goal #2: Maximize Mobility

All road construction projects are designed to increase mobility for non-motorized users in accordance with Complete Streets principles, aiming to link up to a larger community bicycle, transit and pedestrian network where possible.

Goal #3: Environmental, Economic & Social Benefit with Green Infrastructure

Increase total mileage of right-of-way designed to minimize negative environmental impacts in accordance with Green Streets principles.

Goal #4: Train Personnel in Complete and Green Streets Principles

Annually increase the number of management, design and maintenance personnel trained regarding Complete and Green Streets Principles with the goal of 100% of relevant workforce trained.

3. Key 2016 Projects

Bike Infrastructure: The City of Cleveland has a goal to create bicycle infrastructure that connects every neighborhood to a network of bicycle lanes and trails. The Bikeway Implementation Plan has a goal of increasing the bikeway network by 70 miles between 2014-2017, which equals a 250% increase in total mileage. The plan builds on Cleveland's existing bike infrastructure and leverages the City's five year capital improvement program (CIP).

In 2016, the City installed another 17.8 miles of bicycle infrastructure as part of the Bikeway Implementation Plan, the most ever in a single year. That brings our three-year (2014-2016) total to 46.2 miles. Examples of key 2016 projects include:

- Lakeshore Blvd., from East 140th to East 185th
- Lorain Ave., from West 117th to West 150th
- Community College, East 22nd to East 40th

The full list of bike infrastructure completed through 2016, including trends over time, is included in Appendix A. In 2016, the City also provided key input during development of the updated regional bike map, led by NOACA.

The City plans another record-breaking year in 2017 to help reach the 70-mile goal. Examples of 2017 projects include:

- Clark Ave., West 41st to West 85th
- Detroit Ave., Lake to West 117th
- East 71st, Harvard to Broadway
- Fleet Ave., East 65th to Broadway
- Lakefront Bikeway (West Shoreway)
- Madison Ave., West Blvd to West 117th
- Pearl Rd., Wildlife Way to Brookpark
- St. Clair Ave., East 13th to East 55th
- W. Schaaf, Van Epps to Broadview

Looking forward, one innovative project is the Midway Protected Bicycle Facility. The Cleveland Planning Commission and agency partners are working on development of a network of protected bike facilities throughout the City of Cleveland to improve safety. The Commission, working with Parsons Brinkerhoff and a number of partners, recently completed a TLCI that identifies options on City streets that could accommodate a "Midway", which is a unique type of protected facility. A series of streets have been identified and priority corridors were highlighted as part of the feasibility study.

Bike Share: The UH Bikes bike share system officially launched in September 2016. A wide variety of organizations collaborated to launch 25 bike share stations, with expansion planned in 2017.

ciCLEvia: The ciCLEvia open streets initiative launched in 2016, whereby streets are closed to cars and open to people-powered movement -- running, biking, yoga, hopscotch, and much more. The 2016 events took place on West 25th Street, from Wade Avenue to MetroHealth Drive. The program has expanded in 2017 to four events in four different neighborhoods.

Cleveland Tree Plan: The plan, adopted by Planning Commission in 2016, has three overarching goals: (1) recognize trees as critical community infrastructure, (2) reverse the trend of tree canopy loss, and (3) foster capacity for full stewardship of the tree infrastructure. The Plan was developed by the City in partnership with a variety of community partners. The Plan recognizes that reclaiming the Forest City title will require a public-private partnership, especially since the majority of plantings will need to take place on private land. On behalf of the Cleveland Tree Coalition, Mayor Jackson announced goals of 50,000 trees planted on public and private land by 2020, with a longer term goal of 30% canopy by 2040 (we are currently at 19% canopy).

Grants: The City was also awarded a $100,000 U.S. Forest Service grant to plant at least 150 trees on tree lawns, to be planted in 2017.

City Leadership: In 2017, $900,000 is allocated to the Emerald Ash Removal and Replacement Program will be expanded. Trees are also removed and replaced through the Tree Damaged Sidewalk program. The City is also going from six to eight tree crews in order to improve tree trimming and maintenance services.

Fleet Avenue: The Fleet Avenue complete and green street reconstruction was completed in 2016. The street is now friendlier to pedestrians, cyclists, and transit riders. The street also channels storm runoff to landscaped swales designed to absorb stormwater.

LED Streetlighting: Cleveland Public Power continues to make strides toward a citywide Light-Emitting Diode (LED) streetlight conversion. About 150 additional units were installed in 2016, mostly in the Opportunity Corridor area, which builds off the LED pilot project. CPP also has an automated complaint and tracking system for streetlight outages. The number of complaints has decreased by about half since the automated system was installed.

Opportunity Corridor: The Cleveland Planning Commission, Northeast Ohio Regional Sewer District, and agency partners have been working to improve a $331 million roadway project that bisects several Cleveland neighborhoods. Formally a roadway project, Opportunity Corridor has become a boulevard that connects surrounding neighborhoods and opens up development potential on

hundreds of acres. The roadway itself will offer landscaped medians, a dedicated bike and pedestrian trail, and rapid transit access at East 55th and East 105th & Quincy. Additional improvements will be made leveraging land for stormwater management opportunities to build upon this significant investment.

Permeable Pavement: Many projects incorporated permeable pavement, which is a form of green infrastructure that helps improve water quality. For example, the new West Side Market parking lot used 43,000 square feet of pavers and a bioswale which drained 60,000 square feet of conventional paving. Other projects with permeable pavement include Public Square (22,000 square feet), Flats East Bank development, and the East 9th Street pier.

Public Square: A transformed Cleveland Public Square opened in 2016 that incorporated a wide variety of complete and green principles.

Re-Connecting Cleveland - Pathways to Opportunity: Cleveland Metroparks and its partners, including the City of Cleveland, won an $8 million federal TIGER grant in late July to fund five separate trail initiatives.

Multimodal Transit Facility: The City completed a $150,000 plan for a new multimodal transit facility integrating Amtrak, Greyhound, and RTA Rapid Transit, supported by a $120,000 NOACA TLCI grant.

Safe Routes to School: Safe Routes to School made significant progress in 2016, including 69 walk audits at K-8 school and nearly $500,000 in implementation grants awarded to encourage walking and biking to school.

Training: Andrew Cross, Traffic Engineer, received complete and green street training. The Office of Sustainability received a grant to develop green infrastructure maintenance training, which 15 employees received in 2016. In addition, all new MOCAP employees receive training on the City's complete and green streets policy.

Thrive 105-93: The Cleveland Planning Commission is leading a study examining the East 105th East 93rd street corridor. The goal of the study is to connect six neighborhoods on Cleveland's southeast side to jobs, economic activity, and promote targeted reinvestment along this 7-mile corridor. The study identifies Transit Oriented Development opportunities while introducing mode choice to underserved populations.

Year of Sustainable Transportation: Sustainable Cleveland celebrated the Year of Sustainable Transportation, which included many events and initiatives focused on healthier and more sustainable ways to get around the city.

4. Indicators

Complete and Green Street indicators are broken into outputs and outcomes focused on safety and traffic calming, green infrastructure, and maximizing mobility. In essence, outputs represent different tools in the complete and green streets toolbox, to be used as appropriate on projects. Each output includes data tracked for 2016. The outcomes examine longer term trends on areas we hope to improve.

4.1 Outputs

Pedestrian, Bicycle, and Motorist Safety Outputs:

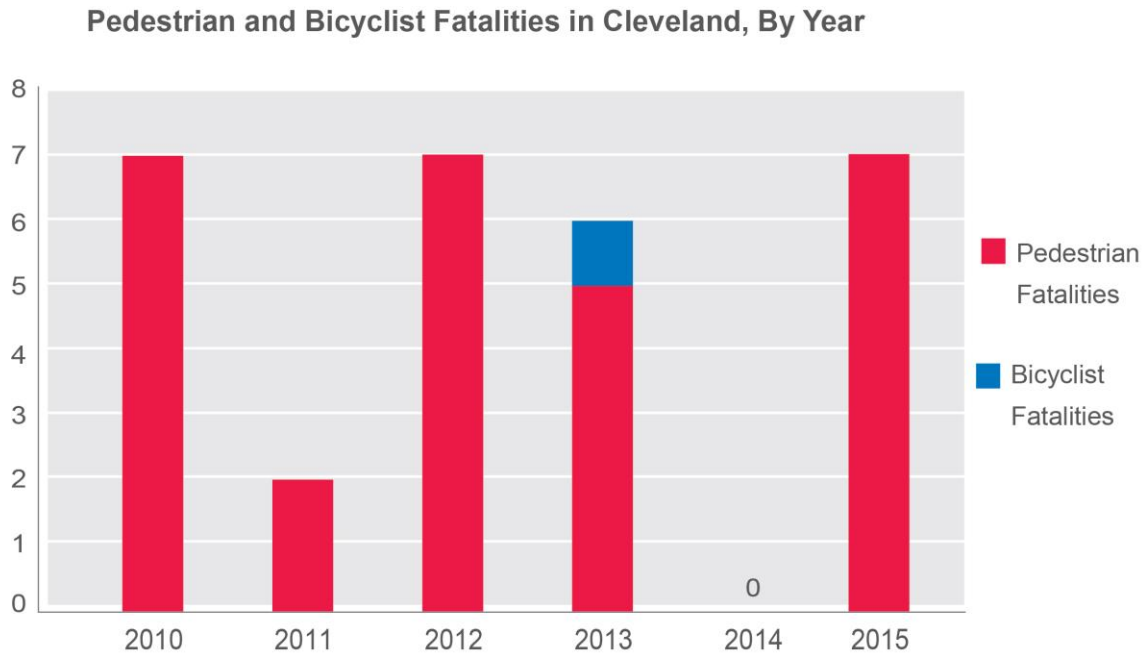
- # of bump-outs installed = 53
- # of pedestrian refuge islands installed = 6
- # of enhanced crosswalks installed = 60
- # of intersection countdown signals installed = 45
- # of installed yield to pedestrian signage installed = 4
- # of ADA compliant ramps installed = 1,416
- Number of pedestrian-scale lights installed = 40
- Square feet of new sidewalks installed = 1,116,916
    - Dominion East Ohio gas = 898,128
    - Tree damaged sidewalk program = 195,555
    - 50/50 sidewalk program = 23,233
- Miles of Multi-purpose paths or bike trails installed = 0
- Miles of Bicycle Lanes Added = 14.1
- Miles of Sharrows added = 3.7

Green Infrastructure Outputs:

- # of trees removed (mostly ash on tree lawns) = 1,451
- # of street trees Planted = 860
    - Street trees ≥ 1" stem diameter = 472
    - Tree-damaged sidewalk program = 348
    - Airports = 40
- All projects use recycled pavement (asphalt and concrete)

4.2 Outcomes

Safety is critical to larger numbers of people shifting to cycling or walking. NOACA's 2016 Transportation Safety Action Plan includes a number of safety strategies, including advance use of technology and roadway signs, education and outreach, enforcement of laws related to keeping pedestrians and bicyclists safe, and implementing safety performance measures on road projects.

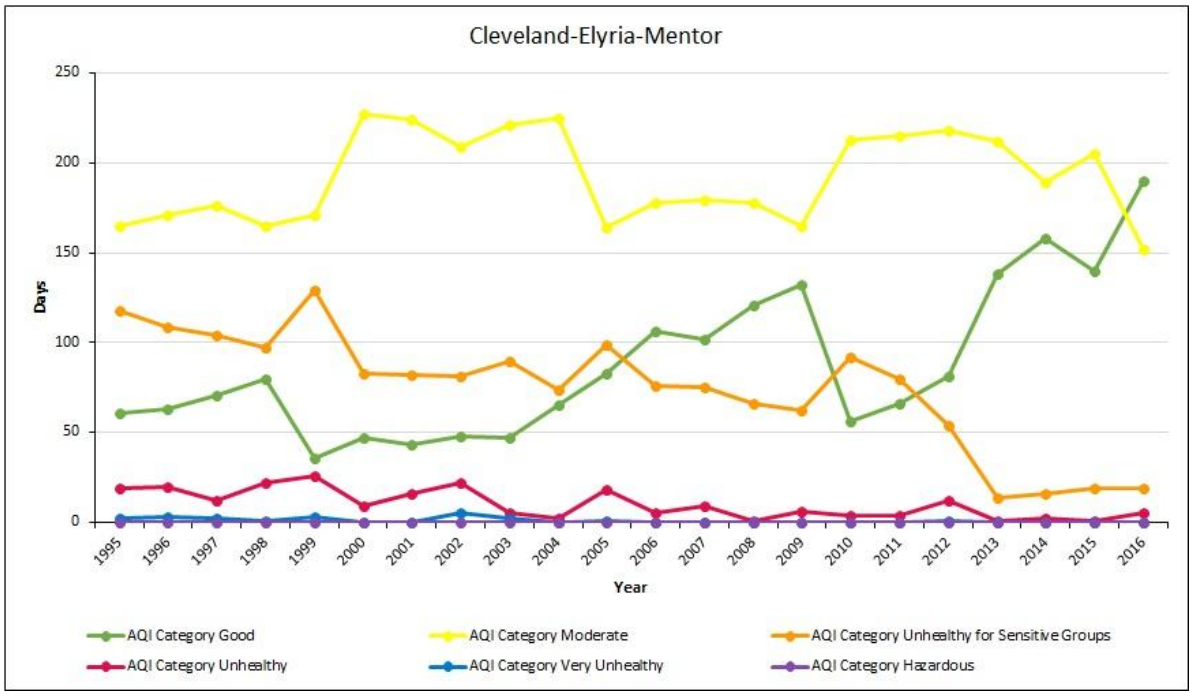


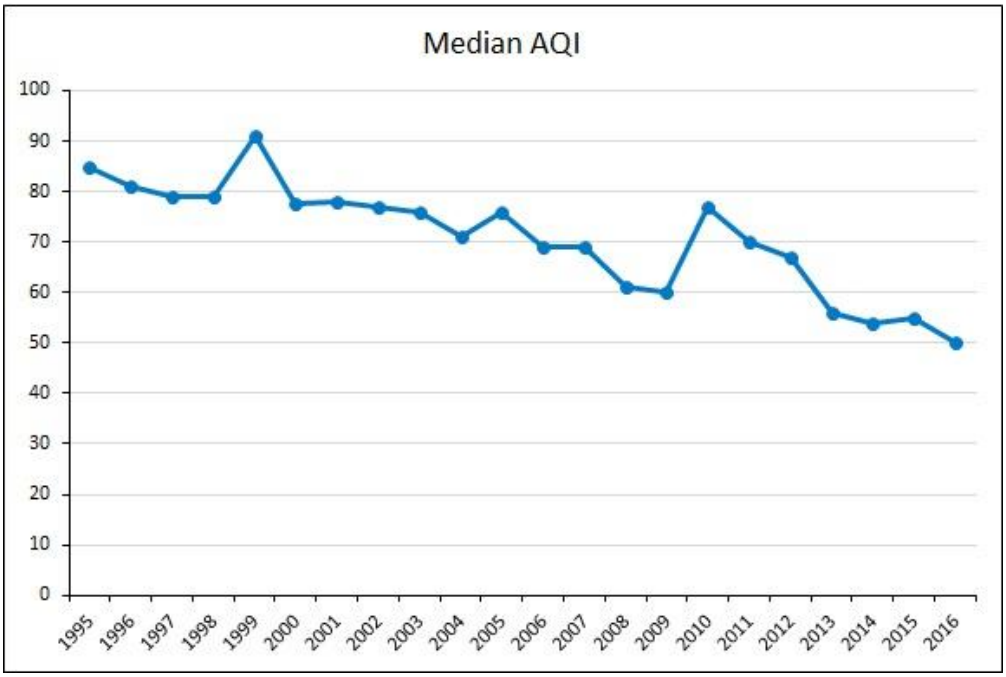
Source: NHTSA's Fatality Analysis Reporting System, NOACA (Note: 2016 data not yet available)

Smart Growth America released their 2016 edition of Dangerous by Design, a report all about pedestrian fatalities across the United States. The report includes a ranking of every state as well as the 104 largest metro areas in the country. Cleveland is among the safer places on the list, ranked the 17th least dangerous metro area in the country for people walking.

Air Quality

Transportation plays a big role in the quality of the air we breathe. The US Environmental Protection Agency calculates an Air Quality Index (AQI) for each day. This index looks at major pollutants such as ozone and carbon monoxide and gives each day a grade. As the second graph indicates, the median AQI has improved (i.e. lowered) over the last couple decades, but improvement is still needed.





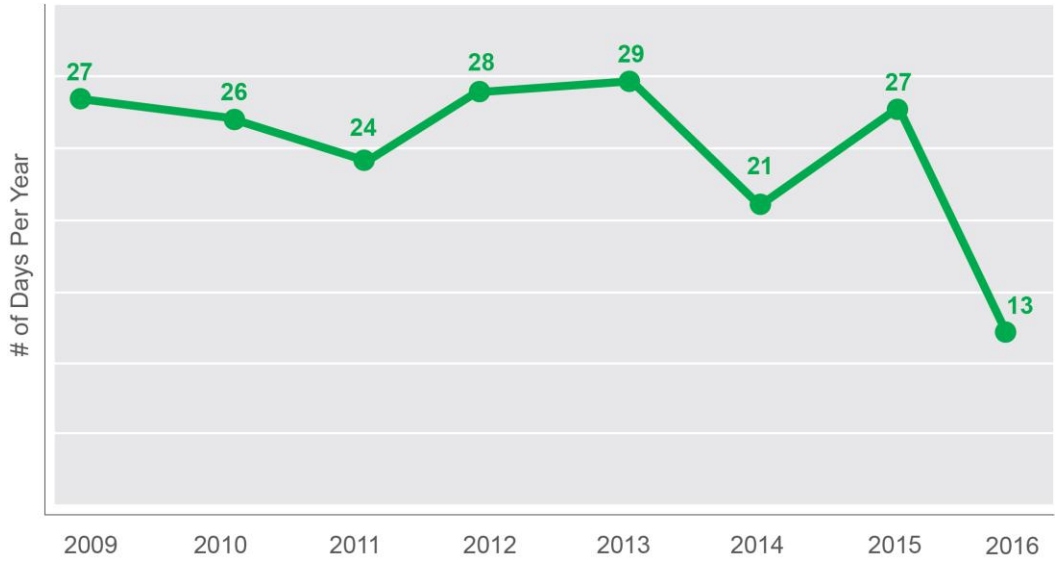
Note: Lower AQI equals better air quality

Cuyahoga River Watershed Water Quality

NEORSD performs water quality surveys along the Cuyahoga River to determine the relative health of the river. One metric, called the Modified Index of Well-Being (MIwb), measures fish community health in the river. This measure looks at the numbers, weight and diversity of fish species at four different points on the river. Distances are measured in "river miles" along the river's length from its mouth on Lake Erie, indicated by “RM” on the graph. The MIwb scores have risen dramatically since 1990, indicating improving water quality conditions along the Cuyahoga River.

Water Advisories

Clevelanders depend on Lake Erie for drinking water as well as for recreational uses like boating, fishing, and swimming. One of the most consistently available data sources is the number of days per year that water advisories are posted on Lake Erie beaches. These numbers represent the annual average number of water advisory days per beach in Cuyahoga County; we aim for a decrease over time. Green infrastructure improves water quality by absorbing stormwater.



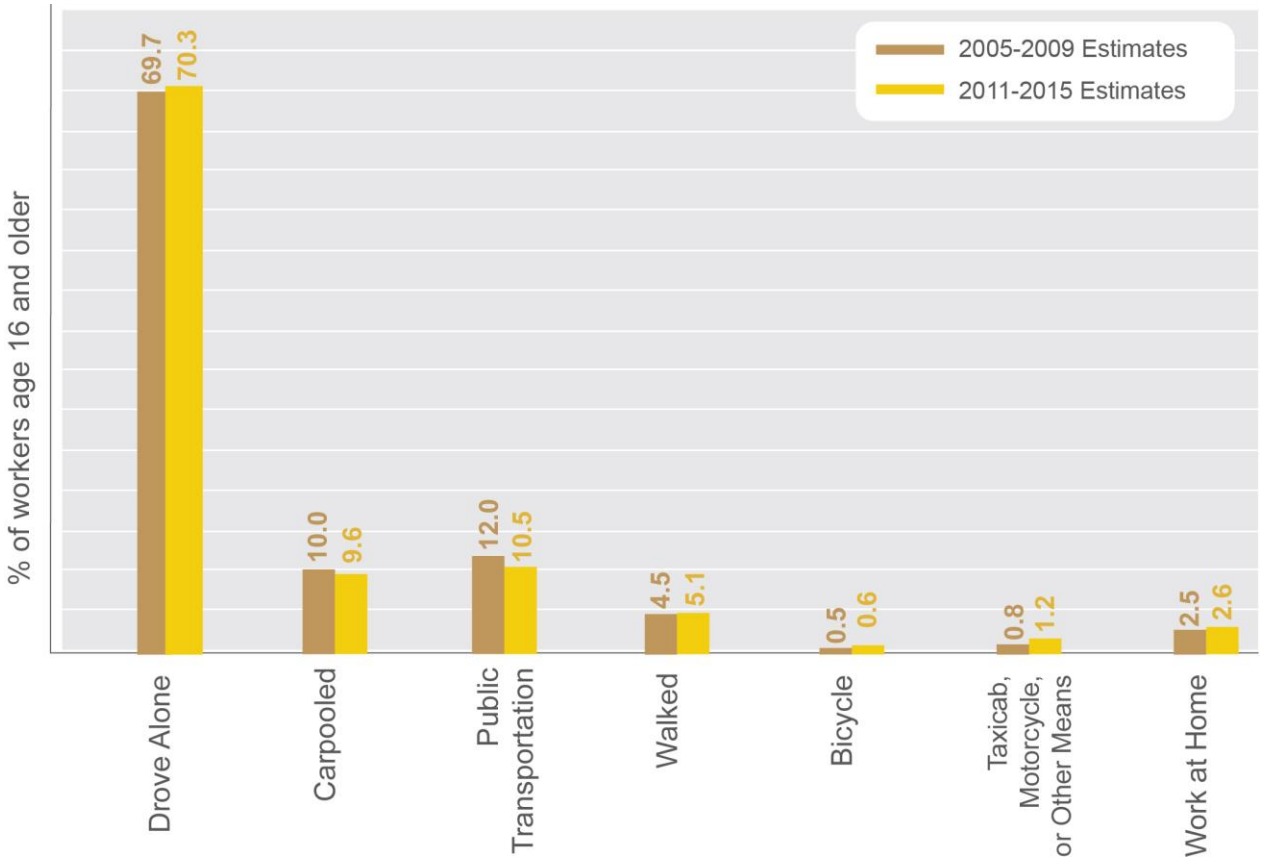
Source: Ohio Department of Health

Walk Score

Cleveland's 2016 overall "Walk Score" is 59, up from 57 the year before. Cleveland is now the 16th most walkable city in the United States. Click here to see walk scores for each Cleveland neighborhood. The larger the number, the more walkable the city.

Transportation Commute Mode

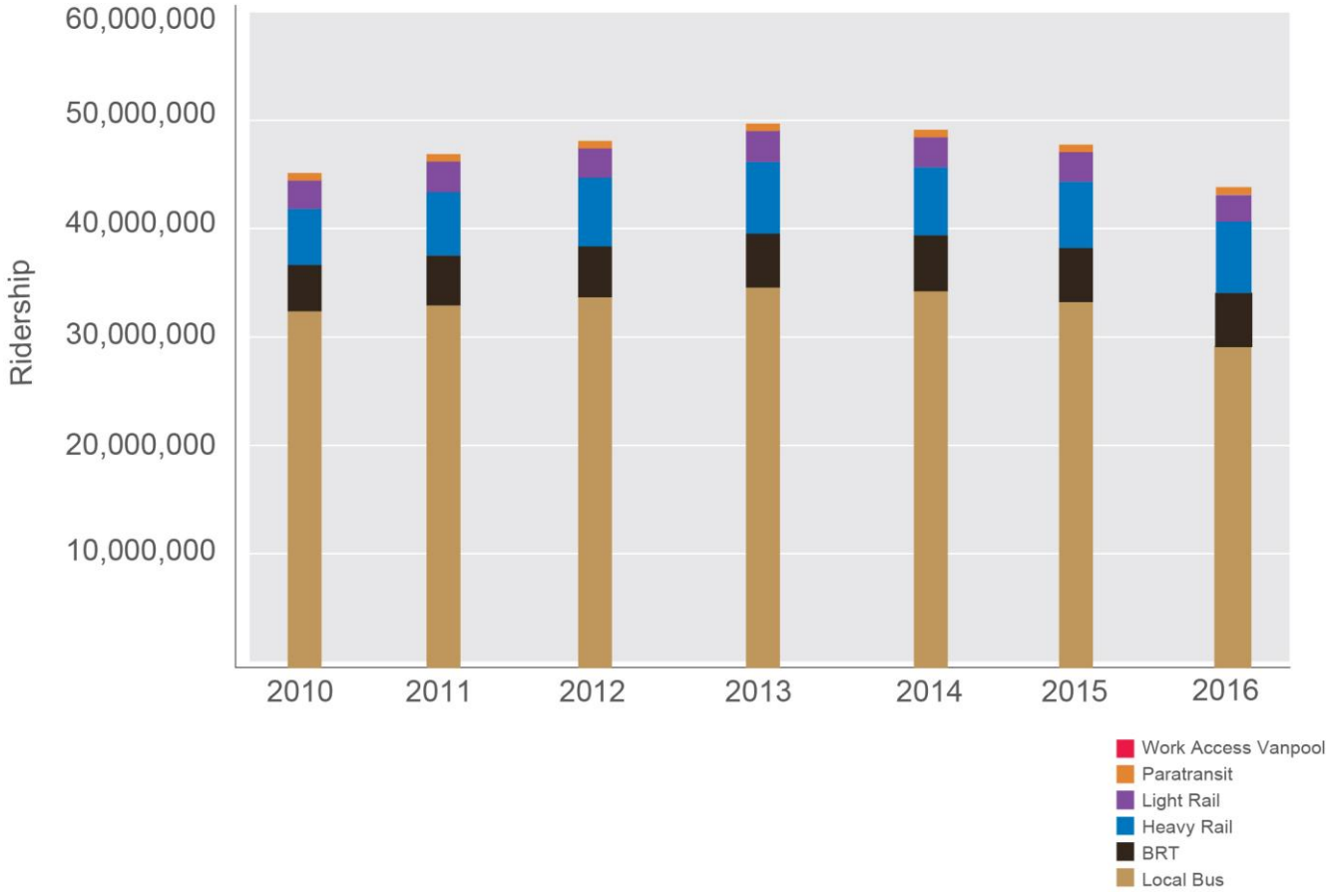
Carpooling, riding public transit, walking, and biking reduce the environmental impact of Cleveland's commuters. Below are the commute modes for Cuyahoga County. We aim for single-passenger commuting to decrease over time.



Source: US Census, American Community Survey 5-year estimates

Transit Ridership

The graph below shows how ridership at the Greater Cleveland Regional Transit Agency (GCRTA) has changed since 2010. Overall changes in ridership have been most affected by bus service availability.



Source: Greater Cleveland Regional Transit Authority

APPENDIX A – BIKE INFRASTRUCTURE

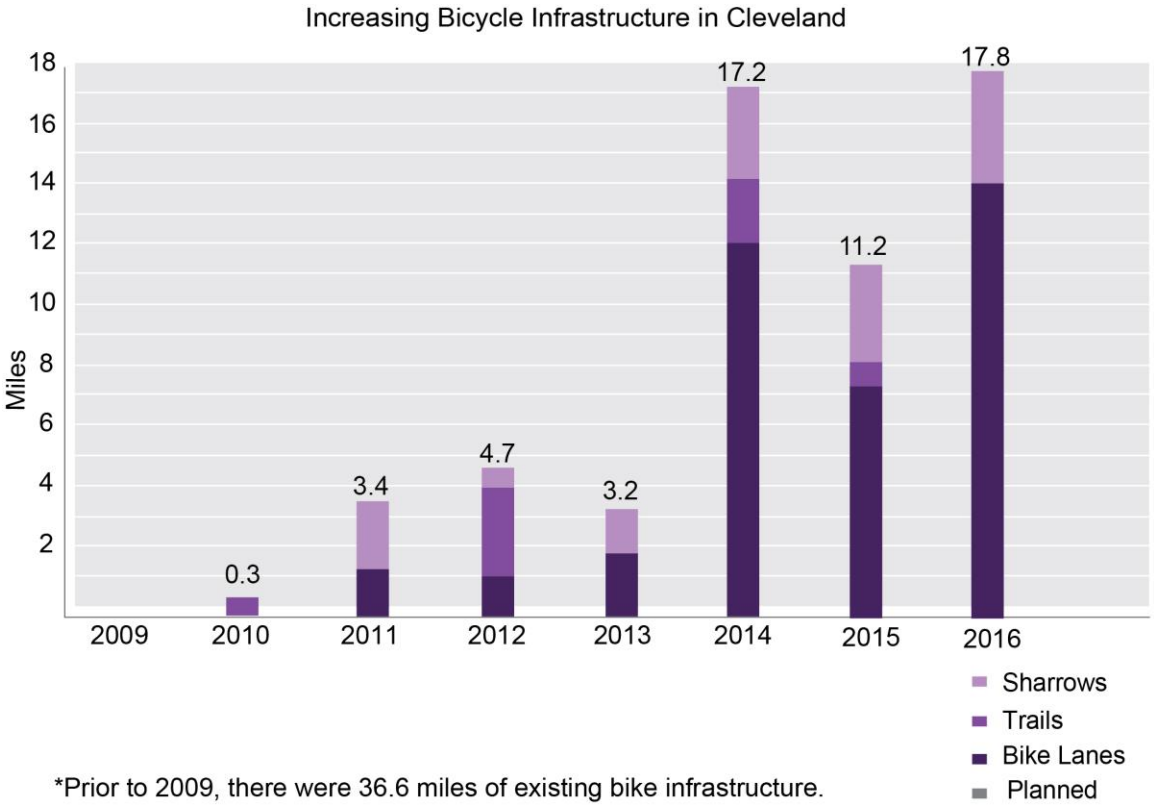
Included on the next page is a chart showing bike infrastructure added per year, back to 2009. Prior to 2009, there was 36.6 miles of bike infrastructure in the city, with 31 miles of that in the form of trails.

Through the end of 2016 the city had 94.4 miles of bike infrastructure, made up of:

- 43.3 miles of bike lanes
- 37.2 miles of trails (off road bike paths)
- 13.9 miles of sharrows (arrows in the middle of a lane signifying that vehicles must share the road with cyclists)

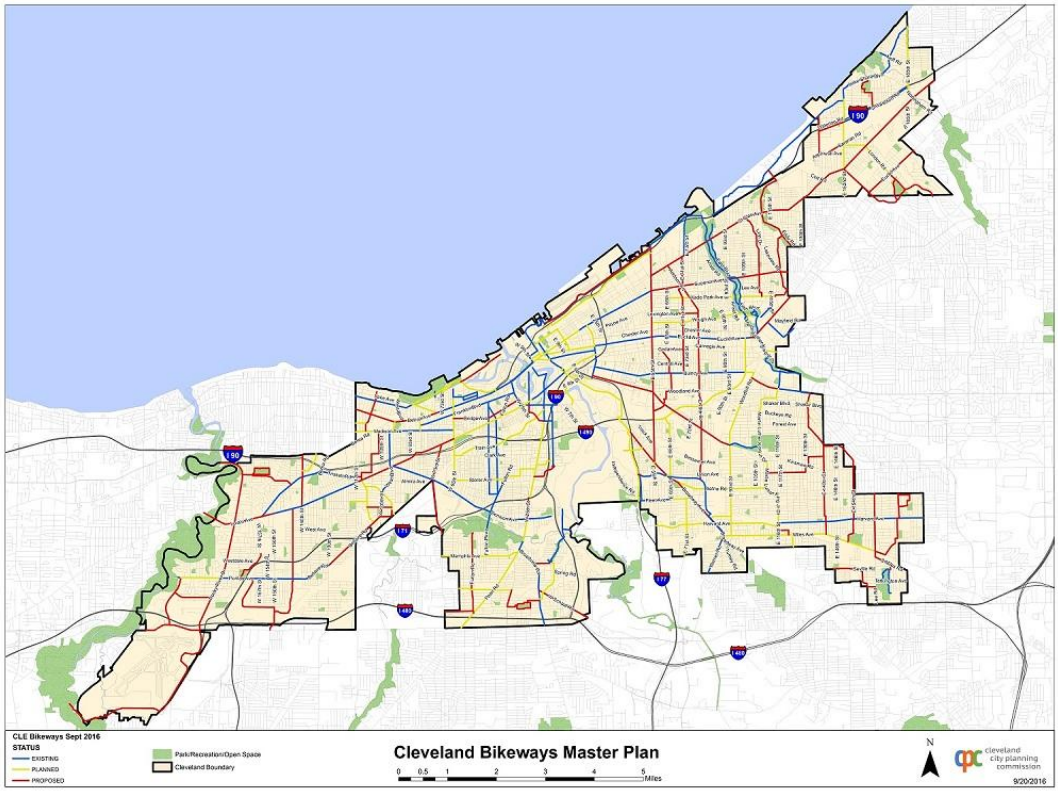
The City has a goal to create bicycle infrastructure that connects every neighborhood to a network of bicycle lanes and trails. This plan aligns with the City's Capital Improvement Plan and will increase the bikeway network by 70 miles between 2014-2017. Included here is a map of the current, planned, and proposed bicycle network. Additionally, you can access the City of Cleveland's bike master plan information on the following link to the Cleveland City Planning Commission's website: http://planning.city.cleveland.oh.us/bike/index.php

In 2016, Cleveland moved up Bicycling Magazine's ranking of the best bike cities, going from 50th to 41st. Cleveland is also a Bronze certified Bicycle Friendly Community, as determined by the League of American Bicyclists (LAB). For more information on bicycling in Cleveland, see a one-page snapshot developed by LAB in Appendix B.



*Prior to 2009, there were 36.6 miles of existing bike infrastructure.

Source: City of Cleveland



BIKE INFRASTRUCTURE COMPLETED THROUGH 2016

	Miles	Street	From	To	Year	Marking Type	Type
ES	0.9	Prospect	Ontario	East 22nd	2016	Thermo Plastic	Bike Lane (0.4) and Sharrow (0.5)
ES	0.7	East 49th	Fleet	Hamm	2016	Paint	Combination Bike lane (75%) and Sharrow
WS	0.33	West boulevard	Detroit	Clifton	2016	Thermo Plastic	Bike Lanes
ES	2.9	Lakeshore	East 140th	East 185th	2016	Paint	Combination Bike lane and Sharrow
ES	2.7	N Marginal	East 9th	East 55th	2016	Thermo Plastic	Sharrows
ES	0.9	Community College	East 22nd	East 40th	2016	Thermo Plastic	Bike Lanes
ES	0.9	East 22nd	Orange	Chester	2016	Thermo Plastic	Bike Lanes
ES	0.5	Fleet	Independence	East 65th	2016	Thermo Plastic	Bike Lanes
WS	0.4	Willey	Scranton	Columbus	2016	Paint	Combination Bike lane and Sharrow
ES	0.3	MLK	Buckingham	Shaker	2016	Paint	Bike Lanes
ES	0.75	Judson	Lee	Miles	2016	Paint	Bike Lanes
ES	1	Quincy	East 40th	East 71st	2016	epoxy	Combination Bike lane and Sharrow
WS	1.8	Lorain	West 150th	West 117th	2016	Thermo Plastic	Combination Bike lane (mostly) and Sharrow
ES	0.75	Warner Road	Turney	City Limits	2016	Thermo Plastic	Bike Lanes
ES	3	Harvard Avenue	East 116	city limits	2016	Thermo Plastic	Bike Lanes

	Miles	Street	From	To	Year	Marking Type	Type
WS	2.2	Triskett	Lorain	West 117th	2015	Thermo Plastic	Bike lane (1.5) and Sharrow (0.7)
ES	0.6	Superior	East 18th	East 30th	2015	epoxy	Bike Lanes
WS	0.4	West 25th	Bridge	Detroit	2015	Thermo Plastic	Bike Lanes
WS	2.0	West Boulevard	W 105	Madison	2015	Thermo Plastic	Bike Lanes
WS	1.7	Broadview	Pearl	Brookpark	2015	Thermo Plastic	Bike Lanes
WS	1.0	West 14th	Buhrer	Fairfield	2015	epoxy Re-stripe	Combination Bike lane and Sharrow
ES	2.5	East Blvd	Euclid	St. Clair	2015	Thermo Plastic	sharrows
WS	0.3	West 73rd	Father Frascati	Edgewater	2015	NA	Trail
WS	0.5	Centennial Trail Phase 1	Scranton Flats	Carter	2015	NA	Trail
ES	0.8	East 72nd	St. Clair	N Marginal	2014	Thermo Plastic	Bike Lanes
ES	1.1	Superior Avenue	East 55th	East 30th	2014	Thermo Plastic	Bike Lanes
ES	0.6	MLK	Fairhill	Buckingham	2014	Thermo Plastic	Bike Lanes
WS	1.9	West 44th Street	Franklin	Bush	2014	Paint	Bike Lanes
WS	1.7	West 41st Street	Bridge	Bush	2014	Paint	Bike Lanes
WS	1.3	Denison Avenue	West 65th	Ridge Road	2014	Thermo Plastic	Bike Lanes
WS	2.3	Puritas / Bellaire	West 130th	Rocky River	2014	Thermo Plastic	Bike Lanes
WS	1.7	Detroit Avenue	Lake	West 25th	2014	Epoxy/Thermo	Bike Lanes
WS	0.6	Detroit Superior Bridge	West 25th	West 9th	2014	Epoxy/Thermo	Bike Lanes
ES	0.7	Larchmere	MLK	N Moreland	2014	Thermo Plastic	Sharrows
WS	1.0	Scranton Rd	Fairfield	Carter	2014	Paint	Sharrows
WS	0.4	Carter Road	Scranton	Canal	2014	Paint	Sharrows
WS	0.2	Kenilworth	West 14th	Scranton	2014	Paint	Sharrows
WS	0.7	Columbus	Abbey	Center	2014	Thermo Plastic	Sharrows
DT	0.3	East 9th St Ext	Ontario	Canal	2014	Paint	Trail
WS	0.9	Lorain Carnegie	Bridge	Bridge	2014	NA	Trail
DT	1.0	Towpath	parallel	Scranton	2014		Trail
DT	0.2	Ontario	Rockwell	Lakeside	2013	Thermo Plastic	Bike Lanes
ES	0.2	Edgehill Road	City Limit	Murray Hill	2013	Paint	Bike Lanes
WS	1.5	Fulton Road	Fulton parkway	Clark	2013	epoxy	Bike Lanes

	Miles	Street	From	To	Year	Marking Type	Type
DT	0.7	Ontario	Carnegie	Rockwell	2013	Thermo Plastic	Sharrows
ES	0.4	Cornell	Murray Hill	Euclid	2013	Paint	Sharrows
WS	0.2	West 9th	Superior	St. Clair	2013	Paint	Sharrows
WS	0.6	Jennings Road	Harvard	SYC Drive	2012	Paint	Bike Lanes
WS	0.7	Abbey Avenue	West 13th	Gehring	2012	Thermo Plastic	Bike Lanes
WS	0.4	Pearl	Wildlife Way	State	2012	Paint	Sharrows
WS	0.2	Randall Rd	Bridge	West 44th	2012		Sharrows
ES	1.5	Kerrush Park			2012		Trail
ES	1.3	Lake to Lakes			2012		Trail
ES	1.4	Harvard Avenue	East 154th	City Limits	2011	Paint	Bike Lanes
WS	2.0	Franklin	West 25th	West 85th	2011	Paint	Sharrows
WS	0.3	Metropark Zoo Connector			2010		Trail
ES	3.5	Euclid	East 22nd	Adelbert	2008	Paint	Bike Lanes
ES	0.5	East 55th	RR Bridge	N Marginal	2008	Paint	Bike Lanes
WS	1.1	Treadway Ravine			2008		Trail
ES	0.9	Mill Creek Falls Trail			2007		Trail
WS	1.5	Steel Yard Commons			2007		Trail
ES	1.5	South Waterloo	East 185th	East 152nd	2006	Paint	Bike Lanes
ES	3.3	Morgana			2006		Trail
WS	0.3	Quigley Connector			2006		Trail
WS	0.5	Grayton Connector			2004		Trail
ES	17.1	Lakefront Bikeway			2003		Trail
WS	2.6	Metropark Zoo			1998		Trail
ES	3.8	Harrison Dillard			1997		Trail

APPENDIX B – LEAGUE OF AMERICAN BICYCLISTS, CLEVELAND SUMMARY

CLEVELAND, OH

TOTAL POPULATION: 396815

POPULATION DENSITY: 5087.4

TOTAL AREA (sq miles): 78.0

OF LOCAL BICYCLE FRIENDLY BUSINESSES: 3

OF LOCAL BICYCLE FRIENDLY UNIVERSITIES: 0

10 BUILDING BLOCKS OF A BICYCLE FRIENDLY COMMUNITY

	Average Silver	Cleveland
Arterial Streets with Bike Lanes	45%	0%
Total Bicycle Network Mileage to Total Road Network Mileage	30%	7%
Public Education Outreach	GOOD	GOOD
Share of Transportation Budget Spent on Bicycling	4.3%	1.0%
Bike Month and Bike to Work Events	GOOD	VERY GOOD
Active Bicycle Advocacy Group	ACTIVE	YES
Active Bicycle Advisory Committee	ACTIVE	IRREGULARLY
Bicycle-Friendly Laws & Ordinances	SOME	AVERAGE
Bike Plan is Current and is Being Implemented	YES	YES
Bike Program Staff to Population	1 PER 70K	1 PER 79363 K

CATEGORY SCORES

ENGINEERING *Bicycle network and connectivity*	5/10
EDUCATION *Motorist awareness and bicycling skills*	4/10
ENCOURAGEMENT *Mainstreaming bicycling culture*	6/10
ENFORCEMENT *Promoting safety and protecting bicyclists' rights*	2/10
EVALUATION & PLANNING *Setting targets and having a plan*	4/10

KEY OUTCOMES

	Average Silver	Cleveland
RIDERSHIP *Percentage of daily bicyclists*	3.5%	0.7%
SAFETY MEASURES **CRASHES** *Crashes per 10k daily bicyclists*	180	1525
SAFETY MEASURES **FATALITIES** *Fatalities per 10k daily bicyclists*	1.4	2

KEY STEPS TO SILVER

» Cleveland has some exciting projects to build in the near future including a TIGER grant and the Reconnecting the Flats project. Make sure that there is appropriate staffing so that the implementation of these large projects does not detract from smaller projects that will help build out your bicycle network throughout the community.

» Bicycle-safety education should be a routine part of education, for students of all ages, and schools and the surrounding neighborhoods should be particularly safe and convenient for biking and walking. Work with your local bicycle groups or interested parents to expand the Safe Routes to School program to all schools.

» Cleveland has some excellent intiatives and events, such as the "Healthy Cleveland Initiative" and "NEOCycle" event. Continue to organize around these existing assets and build off of them by working with their stakeholders, expanding who is involved, and extending their activities.

» Cleveland has an extensive road network that includes many high speed roads. Given the size of Cleveland's road network there needs to be a strategy for bicycle investments that utilizes low-cost bicycle lanes where appropriate and targeted areas for more intensive investments that can create neighborhood-scale networks that are safe and comfortable for people of all ages and abilities.

LEARN MORE » WWW.BIKELEAGUE.ORG/COMMUNITIES

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